AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A head member including a plurality of ejection ports to eject ink, comprising:

an ink-repellent film on a surface having said ejection ports open thereon, said ink-repellent film made of fluorocarbon~~flourocarbon~~ resin subjected to plasma polymerization on the surface~~.~~; and

said ink-repellant film is formed by plasma polymerization of linear perfluorocarbon mixed with carbon tetrafluoride.

2. (cancelled).

3. (cancelled).

4. (previously presented): The head member according to claim 1, wherein a relative polymerization degree of said ink-repellent film is 0.2 or lower.

5. (previously presented): The head member according to claim 1, wherein a hydration degree of said ink-repellent film is 0.2 or lower.

6. (previously presented): The head member according to claim 1, wherein said ink-repellent film is provided only in the vicinity of apertures of said ejection ports.

7. (previously presented): The head member according to claim 1, wherein said ink-repellent film does not exist on inner surfaces of said ejection ports.

8. (previously presented): The head member according to claim 1 , wherein the head member is a nozzle plate formed by drilling said ejection ports in a flat plate.

9. (previously presented): The head member according to claim 1, wherein said ejection ports and at least a part of pressure generating chambers communicating with said ejection ports are formed.

10. (previously presented): The head member according to claim 1, wherein the head member consists of a single crystal silicon substrate.

11. (currently amended): An ink-jet recording head, comprising:

the head member according to claim 1[[;]]:

a passage-forming substrate defining pressure generating chambers communicating with ejection ports of the head member; and

pressure applying means for applying pressure to ink in said pressure generating chambers.

12. (original): An ink-jet recording apparatus comprising the ink-jet recording head according to claim 11.

13. (currently amended): An ink-repellent treatment method on a surface of a head member including a plurality of ejection ports to eject ink, said surface having said ejection ports open thereon, said method comprising the steps of:

disposing said head member in a chamber maintained in a vacuum state;

introducing gaseous linear ~~perfloro carbon~~ perfluorocarbon as a material of an ink-repellent film into the chamber; and

depositing an ink-repellent film made of fluorocarbon~~flourocarbon~~ resin obtained by subjecting the ~~perfloro carbon~~ perfluorocarbon to plasma polymerization on the surface of said head member to perform the ink-repellent treatment.

14. (currently amended) The ink-repellent treatment method according to claim 13, wherein carbon tetrafluoride is introduced into said chamber together with said ~~perfloro carbon~~perfluorocarbon.

15. (currently amended): The ink-repellent treatment method according to any one of claims 13 and 14, wherein said ~~perfloro carbon~~perfluorocarbon has a saturation structure.

16. (currently amended): The ink-repellent treatment method according to claim 15, wherein said ~~perfloro carbon~~perfluorocarbon contains at least six carbons or more.

17. (currently amended) The ink-repellent treatment method according to claim 16, wherein said ~~perfloro carbon~~perfluorocarbon contains at least eight carbons or more.

18. (previously presented): The ink-repellent treatment method according to claim 13, wherein, after the deposition of said ink-repellent film, process gas is converted into plasma, and the plasma gas is flown into said ejection ports, thus removing the ink-repellent film in the ejection ports.

19. (original): The ink-repellent treatment method according to claim 18, wherein the plasma conversion of said process gas is performed under any of the atmospheric pressure and pressure nearly equal thereto.

20. (original): The ink-repellent treatment method according to any one of claims 18 and 19, wherein gas is flown into said ejection ports by evacuating on one side of said ejection ports.

21. (previously presented): The ink-repellent treatment method according to claim 18, wherein said process gas is flown into said ejection ports from a surface side of said nozzle plate without said ink-repellent film formed thereon.

22. (previously presented): The ink-repellent treatment method according to claim 13, wherein, after the deposition of said ink-repellent film, ultraviolet rays are radiated into said ejection ports to remove the ink-repellent film in the ejection ports.

23. (original): The ink-repellent treatment method according to claim 22, wherein said ultraviolet rays are radiated into said ejection ports from the surface side of said nozzle plate without said ink-repellent film formed thereon.

24. (previously presented): The ink-repellent treatment method according to claim 13, wherein, after the deposition of said ink-repellent film, electron beams are radiated into said ejection ports to remove the ink-repellent film in the ejection ports.

25. (original): The ink-repellent treatment method according to claim 24, wherein said electron beams are radiated into said ejection ports from the surface side of said nozzle plate without said ink-repellent film formed thereon.

26. (currently amended): An ink-repellent treatment apparatus, comprising:

a chamber for disposing a head member;

vacuum means for evacuating the chamber;

a discharge unit for discharging plasma in the chamber; and

supply means for introducing gaseous linear ~~perfloro carbon~~perfluorocarbon into the chamber.

27. (currently amended): The ink-repellent treatment apparatus according to claim 26, wherein a supply source for introducing carbon tetrafluoride into said chamber together with said linear ~~perfloro carbon~~perfluorocarbon is provided.

28. (currently amended): The ink-repellent treatment apparatus according to according to any one of claims 26 and 27, wherein said ~~perfloro carbon~~perfluorocarbon has a saturation structure.

29. (currently amended): The ink-repellent treatment apparatus according to claim 28, wherein said ~~perfloro carbon~~perfluorocarbon contains at least six carbons or more.

30. (currently amended): The ink-repellent treatment apparatus according to claim 29, wherein said ~~perfloro carbon~~perfluorocarbon contains at least eight carbons or more.

31. (currently amended): The ink-repellent treatment apparatus according to claim 26, wherein a dew condensation prevention heater is provided on an introduction path for introducing said ~~perfloro carbon~~perfluorocarbon into said chamber to enable said ~~perfloro carbon~~perfluorocarbon to be heated.

32. (previously presented): The ink-repellent treatment apparatus according to claim 26, wherein temperature maintaining means for maintaining said head member in said chamber at a constant temperature.

33. (currently amended): An in-micropore fluorine plastic removing method for removing fluorocarbon~~flourocarbon~~ resin in micropores of a work, said micropores being provided by penetrating said work in a thickness direction, wherein process gas converted into plasma is flown into said micropores from one aperture surface side of said micropores to remove the fluorocarbon resin in said micropores.

34. (original): The in-micropore fluorine plastic removing method according to claim 33, wherein a fluorine plastic film is formed on one surface of said work.

35. (currently amended): The in-micropore fluorine plastic removing method according to claim 34, wherein said process gas is flown into said micropores from a surface side of said work without said fluorocarbon~~flourocarbon~~ resin formed thereon.

36. (currently amended): The in-micropore fluorine plastic removing method according to any one of claims 33, ~~to~~ 34, and 35, wherein the plasma conversion of said process gas is performed under any of the atmospheric pressure and pressure nearly equal thereto.

37. (original): The in-micropore fluorine plastic removing method according to claim 33, wherein gas is flown into said micropores by evacuating on one side of said micropores.

38. (currently amended): An in-micropore fluorine plastic removing method for removing fluorocarbon~~flourocarbon~~ resin in micropores of a work, said micropores being provided by penetrating said work in a thickness direction, wherein ultraviolet rays are radiated from one aperture surface side of said micropores to remove the fluorocarbon~~flourocarbon~~ resin in said micropores.

39. (original): The in-micropore fluorine plastic removing method according to claim 38, wherein a fluorine plastic film is formed on one surface of said work.

40. (currently amended): The in-micropore fluorine plastic removing method according to claim 39, wherein said ultraviolet rays are radiated into said micropores from a surface side of said work without said fluorocarbon~~flourocarbon~~ resin formed thereon.

41. (currently amended): An in-micropore fluorine plastic removing method for removing fluorocarbon~~flourocarbon~~ resin in micropores of a work, said micropores being provided by penetrating said work in a thickness direction, wherein electron beams are radiated from one aperture surface side of said micropores to remove the fluorocarbon resin in said micropores.

42. (original): The in-micropore fluorine plastic removing method according to claim 41, wherein a fluorine plastic film is formed on one surface of said work.

43. (currently amended): The in-micropore fluorine plastic removing method according to claim 42, wherein said electron beams are radiated into said micropores from a surface side of said work without said fluorocarbon ~~flourocarbon~~ resin formed thereon.

44. (original): An in-micropore fluorine plastic removing apparatus, comprising:

supply means for supplying process gas to one side of a work having micropores in a penetrating direction of said micropores;

plasma generating means for converting said process gas into plasma under any of the atmospheric pressure and a pressure nearly equal thereto;

an evacuator for evacuating said process gas converted into plasma through the micropores of the work, said evacuator being disposed on the other side of said work; and

evacuating means connected to said evacuator.

45. (original): The in-micropore fluorine plastic removing apparatus according to claim 44, wherein said evacuator consists of a porous member adhered to said work.

46. (original): The in-micropore fluorine plastic removing apparatus according to any one of claims 44 and 45, wherein said evacuator also serves as the other electrode constituting a pair with one electrode of said plasma generating means, said one electrode being disposed at one side of said work.

47. (original): An in-micropore fluorine plastic removing apparatus, comprising:

a chamber disposing therein a work having micropores;

pressure reducing means for reducing pressure of said chamber; and

ultraviolet-ray radiating means for radiating ultraviolet rays into the micropores of the work.

48. (original): An in-micropore fluorine plastic removing apparatus, comprising:

a chamber disposing therein a work having micropores;

pressure reducing means for reducing pressure of said chamber; and

electron-beam radiating means for radiating electron beams into the micropores of the work.